

REMARKS

Reconsideration of the above-referenced application in view of the above amendment, and of the following remarks, is respectfully requested.

Claims 1-8, 10, 21, and 22 are pending in this case. Claims 1 and 21 are amended herein and claims 9 and 11-20 are cancelled herein.

The Examiner rejected claims 1-2, 10 and 21 under 35 U.S.C. § 103(a) as being unpatentable over Inoue et al. in view of Ko et al.

Applicant respectfully submits that amended claim 1 is patentable over Inoue et al. as there is no disclosure or suggestion in the references of an oxide electrode template located over the first electrode layer and a ferroelectric dielectric layer located over the oxide electrode template, wherein the oxide electrode template and the ferroelectric dielectric layer have substantially similar crystal structures. Inoue teaches a ferroelectric capacitor having a lower electrode of laminated metal and a conductive oxide (i.e., IrO_2). Inoue teaches a capacitor dielectric of PZT or BST. Inoue does not disclose or suggest an oxide electrode template of a substantially similar crystal structure as the ferroelectric dielectric layer. Ko teaches a capacitor stack of Ir, IrO_2 , Pt, PZT, IrO_2 , and Ir. Ko likewise does not disclose or suggest an oxide electrode template of a substantially similar crystal structure as the ferroelectric dielectric layer. Accordingly, Applicant respectfully submits that claim 1 and the claims dependent thereon are patentable over the references.

Applicant respectfully submits that claim 21 is similarly patentable over the references.

The Examiner rejected claims 3-9 under 35 U.S.C. § 103(a) as being unpatentable over Inoue et al. in view of Ko et al. as applied to claims 1-2, 10, and 21 above, and further in view of Hidecki, Nishihara et al., and Jia et al.

Applicant respectfully submits that dependent claims 3-8 are patentable over the references as there is no disclosure or suggestion in the references of an oxide electrode template located over the first electrode layer and a ferroelectric dielectric layer located over the oxide electrode template, wherein the oxide electrode template and the ferroelectric dielectric layer have substantially similar crystal structures, as required by amended claim 1 from which claims 3-8 depend. As discussed above, Inoue and Ko fail to disclose or suggest an oxide electrode template of a substantially similar crystal structure as the ferroelectric dielectric layer. Jia is added to teach that SrRuO_3 is a distorted perovskite material. Hidecki teaches the use of SrIO_3 and CaRuO_3 in forming a ferroelectric capacitor. However, Hidecki does not disclose or suggest SrIO_3 and CaRuO_3 as an oxide electrode template located between the lower electrode and the ferroelectric dielectric as claimed. Moreover, there is no suggestion to replace the IrO_2 of the lower electrode of Inoue with the SrIO_3 and CaRuO_3 of Hidecki. Hidecki merely teaches the use of SrIO_3 and CaRuO_3 as a seed layer for electroplating a lower electrode. After the lower electrode is formed, the seed layer (e.g., SrIO_3) is removed (FIG. 3D-3E). There is no suggestion for replacing the conductive oxide of Inoue (i.e., the IrO_2 formed above the Ir lower electrode) with a sacrificial seed layer (formed prior to forming a lower electrode and later removed) of Hidecki. At most the references suggest forming the Ir lower electrode of Inoue using the plating process of Hidecki and then either using no conductive oxide over the lower electrode as in Hidecki or using IrO_2 as taught in Inoue. Neither of which accomplishes the claimed invention. Accordingly, Applicant respectfully submits that claims 3-8 are patentable over the references.

The Examiner rejected claim 22 under 35 U.S.C. § 103(a) as being unpatentable over Inoue et al. in view of Ko et al. as applied to claim 21 above, and further in view of Goo et al.

Applicant respectfully submits that dependent claim 22 is patentable over the references for the same reasons discussed above relative to claim 21 from which claim 22 depends. Goo is added to teach nickel silicide.

In light of the above, Applicant respectfully requests withdrawal of the Examiner's rejections and allowance of claims 1-8, 10, 21, and 22. If the Examiner has any questions or other correspondence regarding this application, Applicant requests that the Examiner contact Applicant's attorney at the below listed telephone number and address.

Respectfully submitted,

/Jacqueline J. Garner/

Jacqueline J. Garner
Reg. No. 36,144

Texas Instruments Incorporated
P. O. Box 655474, M.S. 3999
Dallas, Texas 75265
Phone: (214) 532-9348
Fax: (972) 917-4418